

## New and unrecorded species of the tribe Trichopterygini (Lepidoptera, Geometridae) from Thailand\*

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**Abstract** Three new species, *Sauris fuscomarginata* sp. nov., *Trichoptergia atrofasciata* sp. nov. and *Trichoptergia viridilineata* sp. nov., are described and figured, and *Hypocometa clauda* Warren and *Trichoptergia sanguinipunctata* (Warren) are newly recorded from Thailand.

**Key words** Lepidoptera, Geometridae, Trichopterygini, Thailand, taxonomy.

Through the courtesy of Prof. Dr Sigeru Moriuti, University of Osaka Prefecture, Sakai, I could examine the larentine species of the collection of Thai Lepidoptera preserved in the Entomological Laboratory, College of Agriculture, University of Osaka Prefecture. After examination, I recognized five species of the tribe Trichopterygini. Three of them are new to science, and the other two have been not recorded from Thailand so far.

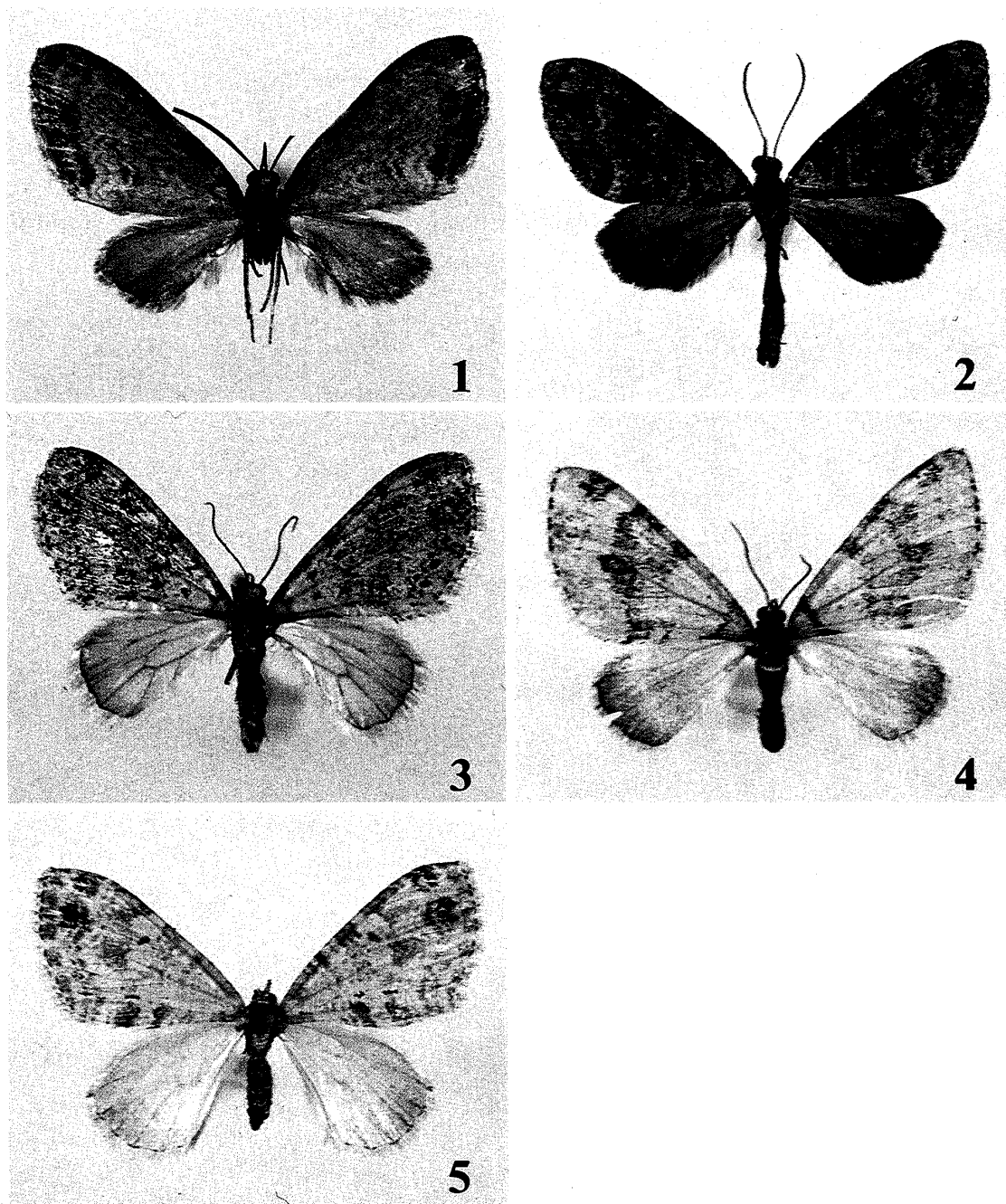
In the present paper, three new species, *Sauris fuscomarginata* sp. nov., *Trichoptergia atrofasciata* sp. nov., *Trichoptergia viridilineata* sp. nov., are described and illustrated, and two newly recorded species from Thailand, *Hypocometa clauda* Warren and *Trichoptergia sanguinipunctata* (Warren), are figured. All the types designated in this paper are preserved in the Entomological Laboratory of University of Osaka Prefecture.

### *Sauris fuscomarginata* sp. nov. (Figs 1, 6-10)

♂ (holotype). Forewing length 13.3 mm. Head smooth, yellowish white, scattered with greenish yellow on vertex, with a fuscous line between antennae; frons greenish yellow, with a fuscous line along its anterior margin; antenna filiform, flattened, fuscous, covered with yellowish white scales on dorsal surface near base; labial palpus porrect, about 2.5 times as long as eye diameter, brownish olive; 1st segment mixed with fuscous, fringed with yellowish white scales. Thorax greenish yellow; tegula with a fuscous line along outer margin; legs glossy yellowish white; femora, tibiae and tarsi of fore- and midlegs glossy grayish brown on outer surface; hind tibia without spurs and hairtufts; hind tibia and tarsus glossy grayish brown on outer surface. Forewing entire, greenish yellow, with fuscous lines, fuscous markings and many dark greenish yellow wavy lines; basal line distinct, curving outwardly at vein R; a fuscous broad band from costa to vein R being at costal 2/5; a fuscous broad line along costa from before middle to apex; subterminal line broad, running from vein  $M_2$  to near vein  $1A+2A$  by terminal line, which is broad, running from costa to near vein  $1A+2A$  along termen; cilia short, glossy grayish brown, mixed with white scales; undersurface glossy grayish brown, paler between vein Cu and dorsum. Hindwing with a small double folded lobe (2/5 length of inner margin) at inner margin near base, pale glossy grayish brown; cilia pale glossy grayish brown; vein  $CuA_2$  long; undersurface darker than uppersurface. Abdominal pouch almost reduced.

Male genitalia (Figs 6-10). Uncus broadly membranous at base, rather short, almost

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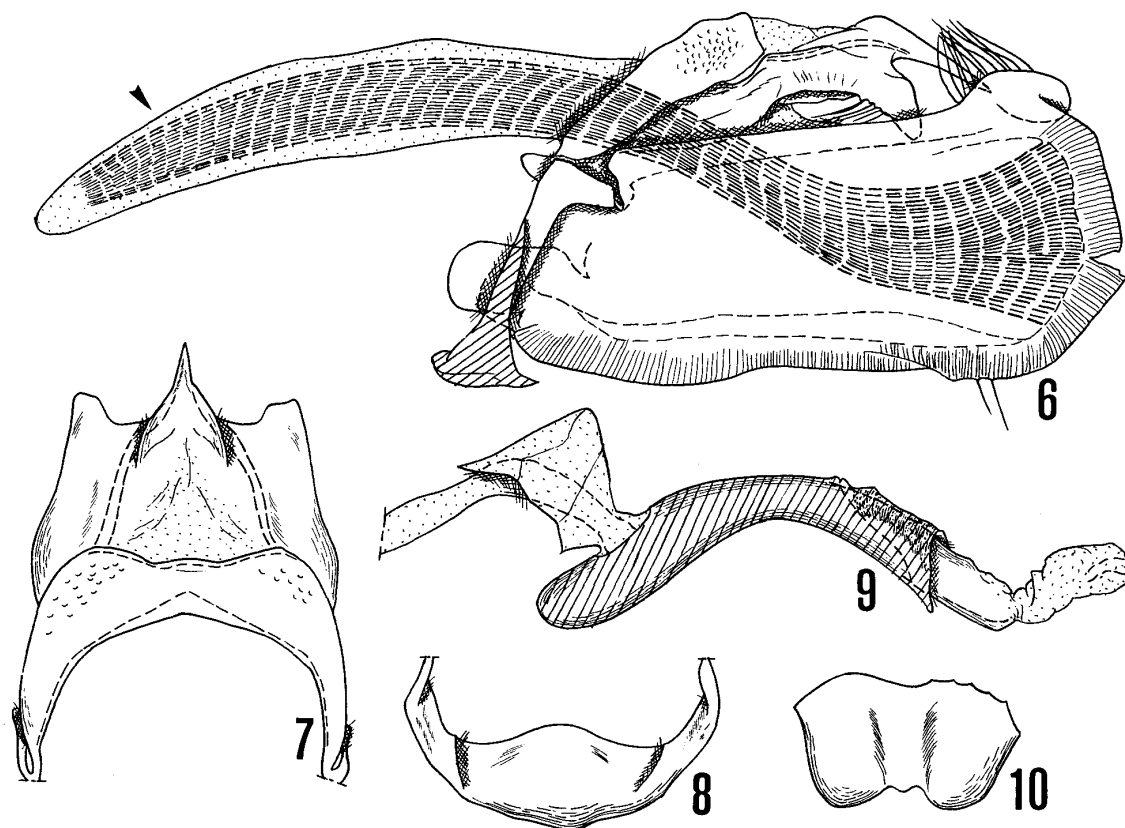


Figs 1-5. Thai Trichopterygini. 1. *Sauris fuscomarginata* sp. nov. 2. *Hypocometa clauda* Warren. 3. *Trichopterygia sanguinipunctata* (Warren). 4. *T. atrofasciata* sp. nov. 5. *T. viridilineata* sp. nov.

straight except for strongly curved base ; socius protruded ventrally, with a rounded tip ; diaphragmal pouch (Fig. 6, arrow) as long as valva. Phallus shorter than valva. Juxta as in Fig. 10.

Female. Unknown.

Specimen examined. Holotype, ♂, THAILAND, Chiang Mai, Doi Pui (ca 1,300 m), 26-27. X. 1985 (S. Moriuti, T. Saito & Y. Arita leg.), Genitalia No. SH-839.



Figs 6-10. Male genitalia of *Sauris fuscomarginata* sp. nov. 6. Whole genitalia, lateral view. 7. Tegumen, dorsal view. 8. Saccus, dorsal view. 9. Phallus, lateral view. 10. Juxta, dorsal view.

Host. Unknown.

Remarks. This species is more similar to *Episteria nigrilinearia* (Leech) than to other congeners in appearance, but differs from it in a small folded lobe of the hindwing and a reduced abdominal pouch in male.

On the basis of the genitalia and the male secondary sexual characters, Dugdale (1980) divided the Australian species of the genus *Sauris* Guenée into three species-groups. The present species is considered to belong to his *lichenias* group, although the female is unknown.

### ***Hypocometa clauda* Warren (Fig. 2)**

*Hypocometa clauda* Warren, 1896, *Novit. zool.* **3**: 119; Holloway, 1976, *Moths Borneo spec. Ref. Mt Kinabalu*: 71, fig. 505; Chang, 1990, *Illust. Moths Taiwan* **3**: 197; Inoue, 1992, *Lepid. Taiwan* **1** (2): 125.

Specimen examined. 1 ♂, THAILAND, Chiang Mai, Pakia, 23. VII. 1981 (H. Kuroko, S. Moriuti, Y. Arita & Y. Yoshiyasu leg.).

Distribution. N. India (Khasia Hills), Sikkim, N. Myanmar, Thailand (new record), Taiwan.

### ***Trichopterigia sanguinipunctata* (Warren) (Fig. 3)**

*Amathia sanguinipunctata* Warren, 1893, *Proc. zool. Soc. Lond.* **1893**: 363, pl. 31, fig. 17.

*Trichopterigia sanguinipunctata*: Hampson, 1895, *Fauna Br. India* (Moths) **3**: 404; Yazaki, 1992, *Tinea* **13** (Suppl. 2): 16, pl. 5, fig. 31.

*Lobophora pulcherrima* Swinhoe, 1893, *Ann. Mag. nat. Hist.* (6) **12**: 224; Hampson, 1895, *Fauna Br. India* (Moths) **3**: 404, as a junior synonym of *T. sanguinipunctata*.

*Trichopterigia pulcherrima*: Holloway, 1976, *Moths Borneo spec. Ref. Mt Kinabalu*: 70, fig. 497; Yazaki, 1987, *Tinea* **12** (Suppl.): 231, figs 6, 16; Chang, 1990, *Illust. Moths Taiwan* **3**: 178; Inoue, 1992, *Lepid. Taiwan* **1** (2): 125.

Specimens examined. 2 ♂, THAILAND, Chiang Mai, Doi Pakia (ca 1,500 m), 5-7. IX. 1987 (S. Moriuti, T. Saito, Y. Arita & Y. Yoshiyasu leg.).

Distribution. Nepal, Sikkim, Assam, Myanmar, Luzon, Thailand (new record), Taiwan.

Remarks. *T. sanguinipunctata* (Warren) and *T. pulcherrima* (Swinhoe) have been treated as an independent species respectively (Holloway, 1976; Yazaki, 1987, 1992). Both species, however, are indistinguishable from each other (Scoble, *pers. comm.*). Therefore, the present paper follows Hampson (1895).

### ***Trichopterigia atrofasciata* sp. nov.** (Figs 4, 11-18)

Described from a worn specimen.

♂ (holotype). Forewing length 13.2 mm. Head yellowish white; antenna filiform, grayish brown, covered with yellowish white on dorsal surface near base; labial palpus about twice as long as eye diameter, fuscous; 3rd segment yellowish white. Thorax scattered with yellowish white scales, but scales almost removed; tegula fringed with yellowish white; legs fuscous on outer surface, glossy yellowish white on inner surface; terminal end of each tarsal segment white. Forewing bad condition, yellowish white, scattered with greenish yellow, fuscous and reddish scales partly, with fuscous maculation; basal line distinct, running obliquely, broad at dorsal margin; antemedial and postmedial bands broad; subterminal band broad, running from costa to vein  $R_5$ ; terminal dots fuscous; cilia white, mixed with fuscous scales sparsely; undersurface pale grayish white; markings paler than those of uppersurface. Hindwing with a small double folded lobe (about 1/4 length of inner margin), glossy yellowish white, scattered with pale grayish brown scales; terminal band broad, pale grayish brown, indistinct at inner margin; cilia white; undersurface pale grayish white. Abdomen grayish brown dorsally, scattered with black and yellowish white scales, except for yellowish white anterior margin of 1st segment; venter yellowish white; abdominal pouch small.

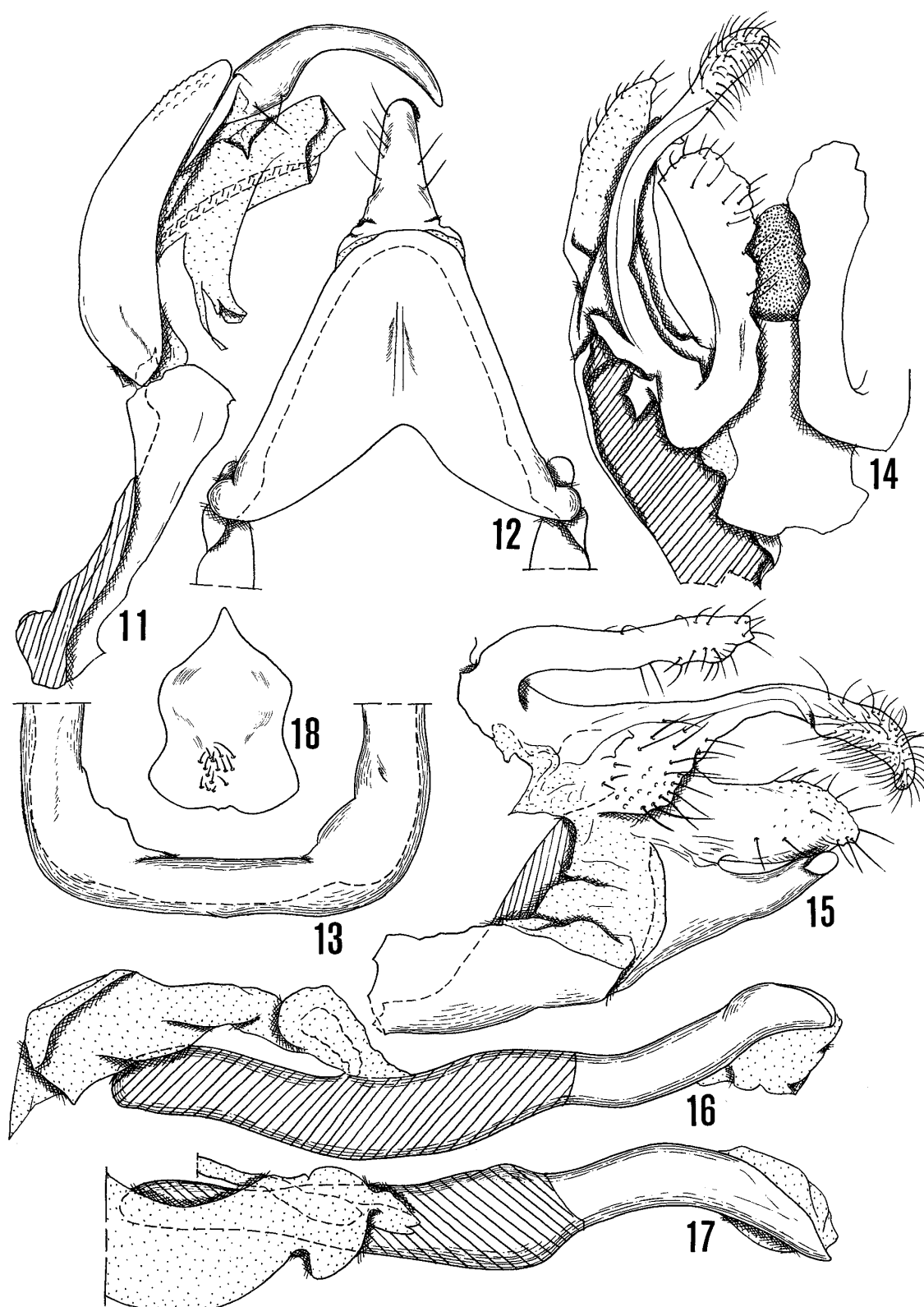
Male genitalia (Figs 11-18). Tegumen triangular in dorsal view; uncus short, arched, with a blunt tip; saccus U-shaped. Valva with a sclerotized and rather long plate extending from dorsobasal part of costa towards caudal end, with a swelling on proximoventral margin of free cucullus; a free process of sacculus gradually narrowed, curved inwards before terminal end, flattened at apex. Phallus slender, longer than valva, slightly twisted, broadest at medial part. Juxta as in Fig. 18.

Female. Unknown.

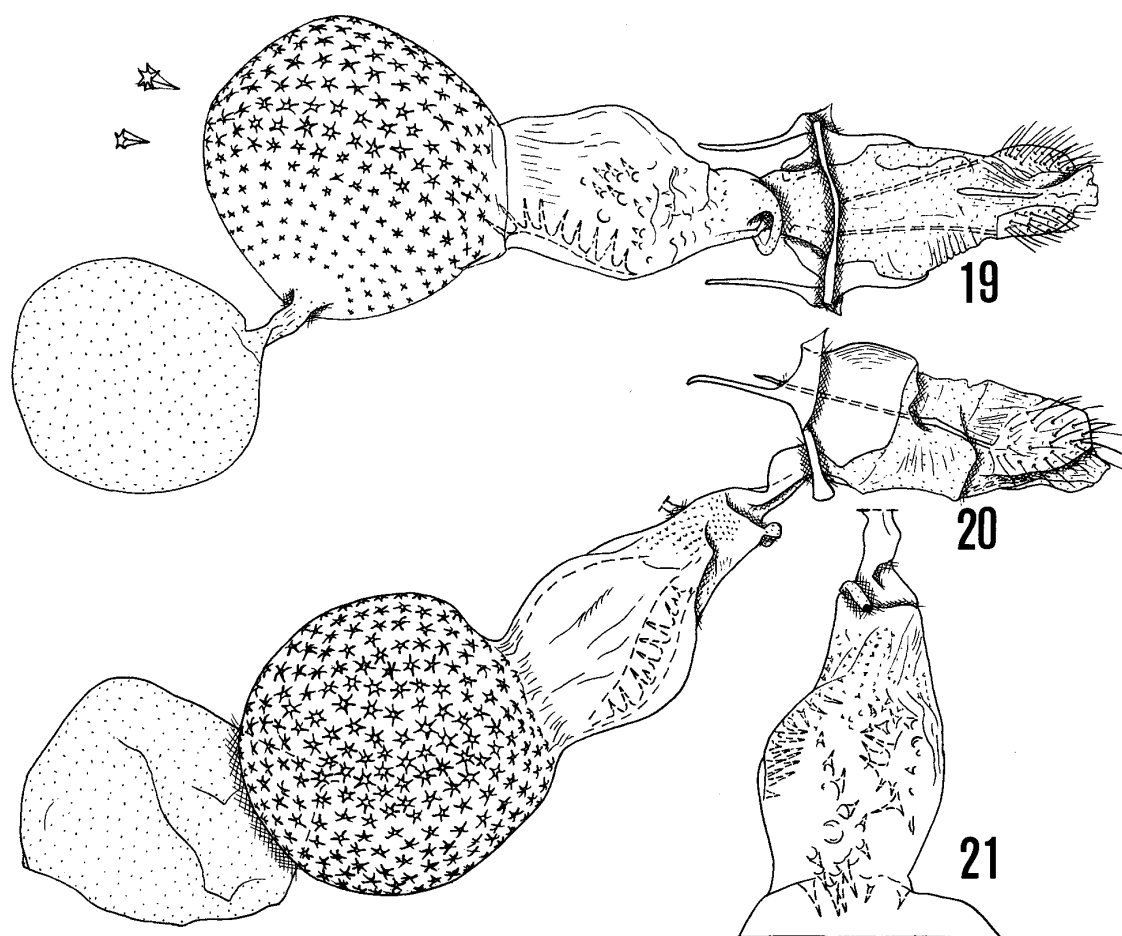
Specimen examined. Holotype, ♂, THAILAND, Chiang Mai, Doi Pakia (ca 1,500 m), 5. XI. 1985 (S. Moriuti, T. Saito & Y. Arita leg.), Genitalia No. SH-841.

Host. Unknown.

Remarks. The specimen described here is in a bad condition, but the species has distinctive characters such as fuscous maculation of basal, antemedial and postmedial fasciae of the forewing and presence of a sclerotized plate extending from dorsobasal part of the costa towards caudal end in the male genitalia.



Figs 11-18. Male genitalia of *Trichopterygia atrofasciata* sp. nov. 11. Ring, lateral view. 12. Tegumen, dorsal view. 13. Saccus, dorsal view. 14. Right valva, dorsal view. 15. Right valva, inner view. 16. Phallus, lateral view. 17. Phallus, dorsal view. 18. Juxta, ventral view.



Figs 19-21. Female genitalia of *Trichopterigia viridilineata* sp. nov. 19. Whole genitalia, ventral view. 20. Whole genitalia, lateral view. 21. Ductus bursae, right side.

***Trichopterigia viridilineata* sp. nov.** (Figs 5, 19-21)

♀ (holotype). Forewing length 17.5 mm. Head yellowish white; antenna filiform, greenish yellow near base; labial palpus about 2.5 times as long as eye diameter, fuscous, fringed with yellowish white; inner surface, apical half of 2nd segment and apex of 3rd segment yellowish white. Thorax yellowish white; tegula yellowish white; legs grayish brown on outer surface, with whitish bands, yellowish white mixed with grayish brown on inner surface; terminal end of each tarsal segment yellowish white. Forewing yellowish white, with many greenish yellow lines and fuscous markings, but scales slightly removed; basal line broad; antemedial, postmedial and subterminal bands consisting of three or more greenish yellow lines respectively, partly bounded by fuscous; discoidal dot roundish, distinct; subterminal band with fuscous lines, especially from costa to near vein  $M_3$ ; terminal band broad; terminal dots yellowish green; cilia yellowish white, scattered with greenish yellow; undersurface pale grayish brown, paler near dorsum, with a grayish brown line on termen. Hindwing glossy yellowish white, scattered with grayish scales along termen; terminal dots pale grayish brown; cilia yellowish white, with pale grayish brown scales at end of each vein; undersurface darker than uppersurface. Abdomen grayish brown, mixed with white and fuscous scales; posterior half of 8th segment completely sclerotized.

Female genitalia (Figs 19-21). Corpus bursae bulbous, covered with many spines with a

star-shaped base, with a bulbous and membranous accessory bursa at right side before cephalic end; ductus bursae relatively short, scattered with various sized spines except for left side; apophyses anteriores about 2/5 length of apophyses posteriores.

Male. Unknown.

Specimen examined. Holotype, ♀, THAILAND, Chiang Mai, Doi Inthanon (ca 2,571 m), 2. XI. 1985 (S. Moriuti, T. Saito & Y. Arita leg.), Genitalia No. SH-842.

Host. Unknown.

Remarks. The simple maculation of yellowish white ground color and pale greenish yellow lines is a good characteristic of this species.

### Acknowledgments

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### References

- Dugdale, J. S., 1980. Australian Trichopterygini (Lepidoptera: Geometridae) with descriptions of eight new taxa. *Aust. J. Zool.* **28**: 301-340.
- Hampson, G. F., 1895. *The fauna of British India including Ceylon and Burma* (Moths) **3**: i-xxviii, 1-546.
- Holloway, J. D., 1976. *Moths of Borneo, with special Reference to Mount Kinabalu*. viii, 132 pp., 32 pls. Kuala Lumpur.
- Yazaki, K., 1987. Some new and unrecorded species of the genus *Trichopterigia* (Lepidoptera, Geometridae) from Taiwan. *Tinea* **12** (Suppl.): 226-231.
- , 1992. Geometridae. In Haruta, T. (ed.), *Moths of Nepal*, part 1. *Tinea* **13** (Suppl. 2): 5-46, pls 2-12.

### 摘 要

タイ国産 Trichopterygini 族 (鱗翅目, シャクガ科) の新種ならびに未記録種 (橋本里志)

大阪府立大学農学部森内茂教授のご好意で, 同大学農学部昆虫学研究室に保存されているタイ国産鱗翅類コレクションからシャクガ科ナミシャク亜科の標本を検査する機会を得た. 調査の結果, Trichopterygini 族に属する 3 新種 2 未記録種を認めたので, 報告する.

*Sauris fuscomarginata* sp. nov.

本種は, 斑紋において同属の他種よりも近縁属の *Episteira nigrilinearia* (Leech) ウスミドリナミシャクに似るが, 雄後翅基部にある fold が小さいことや腹部基部の袋状構造物が退化していることで容易に区別される. Dugdale (1980) は, 雌雄交尾器や雄の二次性徴器官に基づいてオーストラリアの本属を 3 つの種群に分類したが, 本種は 3 つの種群のうちの一つ *lichenias* group に属する.

*Hypocometa clauda* Warren

本種はインド北部から台湾にかけて分布しているが, タイからは初記録である.

*Trichopterigia sanguinipunctata* (Warren)

本種と *T. pulcherrima* (Swinhoe) はそれぞれ独立の種として扱われてきたが, ロンドン自然史博物

館の Scoble 博士によると両種は区別しがたいと言う事なので、本論文では Hampson (1895) に従い、*pulcherrima* を *sanguinipunctata* のシノニムとした。タイ国からは初記録である。

*Trichopterigia atrofasciata* sp. nov.

本種の記載に用いた完模式標本の状態は良くないが、前翅に顕著な黒帯を有することや雄交尾器のバルバのコスタの基部背面から尾方に向かう硬化したプレートを有することで同属の他種から区別しうる。

*Trichopterigia viridilineata* sp. nov.

黄白色の地色に薄い緑黄色の多数の帯というシンプルな斑紋が、本種の特徴である。

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